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infectious nucleic acid construct encoding a recombinant antibody to that agent.

21
Cmt 2. (Amended) A composition according to claim 1 wherein the animal is selected from a mammal or a fish.

3. (Amended) A composition according to claim 1 wherein the animal has a deficient immune system.

4. (Amended) A composition according to claim 1 wherein the disease-causing agent is selected from a pathogen, an allergen or a toxic substance.

5. (Amended) A composition according to claim 1 wherein the protection is prophylactic.

6. (Amended) A composition according to claim 1 wherein the encoded recombinant antibody is derived from an antibody raised against the disease-causing agent.

7. (Amended) A composition according to claim 1 wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.

8. (Amended) A composition according to claim 1, wherein the nucleic acid construct further comprises a gene sequence encoding a secretion signal peptide.

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9. (Amended) A composition according to claim 1 comprising genes encoding antibody molecules to several different epitopes of the disease-causing agent.

10. (Amended) A composition according to claim 1 comprising a gene-expression library encoding antibodies to the disease-causing agent.

a1
Cont
11. (Amended) A composition according to claim 10 wherein the gene expression library encodes single-chain antibody molecules to the disease-causing agent.

12. (Amended) A composition according to claim 1 wherein the encoded recombinant antibody is a virus-neutralising antibody.

13. (Amended) A composition according to claim 12 wherein the encoded virus-neutralising antibody is single chain molecule.

14. (Amended) A composition according to claim 1 including a nucleic acid construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino acids substituents in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

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15. (Amended) A composition according to claim 6 wherein when the disease-causing agent is an allergen the antibody molecule is derived from an antibody raised against IgE molecules.

16. (Amended) A composition according to claim 1 wherein the nucleic acid construct is formed from DNA.

a1
cont
17. (Amended) A composition according to claim 1 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

18. (Amended) A composition according to claim 17 wherein the composition is for delivery by injection, spray or gene gun.

Please add the following new claims:

a2
-- 21. A composition for protection of an animal against a disease-causing agent, the composition comprising a non-infectious nucleic acid construct encoding a recombinant antibody to that agent wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.

22. A composition according to claim 21 wherein the animal is selected from a mammal or a fish.

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23. A composition according to claim 21 wherein the animal has a deficient immune system.

24. A composition according to claim 21 wherein the disease-causing agent is selected from a pathogen, an allergen or a toxic substance.

25. A composition according to claim 21 wherein the protection is prophylactic.

26. A composition according to claim 21 wherein the encoded recombinant antibody is derived from an antibody raised against the disease-causing agent.

27. A composition according to claim 21, wherein the nucleic acid construct further comprises a gene sequence encoding a secretion signal peptide.

28. A composition according to claim 21 comprising genes encoding antibody molecules to several different epitopes of the disease-causing agent.

29. A composition according to claim 21 comprising a gene-expression library encoding antibodies to the disease-causing agent.

30. A composition according to claim 29 wherein the gene expression library encodes single-chain antibody molecules to the disease-causing agent.

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31. A composition according to claim 21 wherein the encoded recombinant antibody is a virus-neutralising antibody.

32. A composition according to claim 31 wherein the encoded virus-neutralising antibody is single chain molecule.

33. A composition according to claim 21 including a nucleic acid construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino acids substituents in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

34. A composition according to claim 26 wherein when the disease-causing agent is an allergen the antibody molecule is derived from an antibody raised against IgE molecules.

35. A composition according to claim 21 wherein the nucleic acid construct is formed from DNA.

36. A composition according to claim 21 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

37. A composition according to claim 36 wherein the composition is for delivery by injection, spray or gene gun.

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38. A composition for protection of a fish against a disease-causing agent, the composition comprising a non-infectious DNA construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino acids substituents in the H-chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.

39. A composition according to claim 38 wherein the protection is prophylactic.

40. A composition according to claim 38 wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.

41. A composition according to claim 38, wherein the nucleic acid construct further comprises a gene sequence encoding a secretion signal peptide.

42. A composition according to claim 38 wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

43. A composition according to claim 38 wherein the composition is for delivery by injection, spray or gene gun.

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44. A method of treating an animal comprising administering thereto a composition according to claim 1.

45. A method according to claim 44, wherein said composition mediates expression of a recombinant antibody to the pathogen, allergen or toxin.

46. A method of treating an animal comprising administering thereto a composition according to claim 3.

47. A method of treating an animal comprising administering thereto a composition according to claim 6.

48. A method of treating an animal comprising administering thereto a composition according to claim 21.

49. A method of treating a fish comprising administering thereto a composition according to claim 38.

50. A method of treating an animal with a congenital or acquired immunodeficiency, comprising administration of a number of non-infectious nucleic acid constructs encoding antibodies against a spectrum of disease-causing agents.

51. A method according to claim 44, wherein said animal is a fish or another aquatic animal.

52. A method according to claims 44, wherein said animal is a mammal.